IN THE CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A router comprising:

a routing processor which shapes at least one physically existing external network interface as a logically virtual network interface; and

at least one linecard processor which includes the external network interface,

wherein the routing processor and the linecard processor control a maximum transmission unit (MTU) of the external network interface by (a) disassembling packet data, transmitted and received between the routing processor and the linecard processor, into data segments of a predetermined size and (b) assembling the disassembled data segments after determining that received packet data is from disassembled data segments, into the original packet data structure, if the MTU of the external network interface is greater than the MTU of an internal data communication channel in the router.

2. (Original) The router of claim 1, wherein the routing processor comprises:

a first network interface which is physically connected to the linecard processor through an ethernet switch; and

a virtual network interface unit which disassembles the packet data into data segments of

the predetermined size and assembles the data segments into the original packet data structure, if the MTU of the external network interface is greater than the MTU of the first network interface.

3. (Original) The router of claim 2, wherein the linecard processor comprises:

a second network interface which is physically connected to the routing processor through the ethernet switch; and

an external inter process communication (IPC) interface which disassembles the packet data into data segments of the predetermined size and assembles the data segments into the original packet data structure, if the MTU of the external network interface is greater than the MTU of the second network interface.

4. (Original) The router of claim 3, wherein the virtual network interface unit comprises at least one virtual network interface corresponding to the external network interface, respectively, each of which comprises a disassembling/assembling unit for disassembling the packet data into data segments and assembling the data segments of the predetermined size into the original packet data structure, such that the MTU of the external network interface is not greater than each MTU of the first and second network interfaces.

5. (Original) The router of claim 3, wherein the external IPC interface comprises a disassembling/assembling unit for disassembling the packet data into data segments of the

predetermined size and assembling the data segments of the predetermined size into the original packet data structure, such that the MTU of the external network interface is not greater than each MTU of the first and second network interfaces.

6. (Previously Presented) A method of supporting a maximum transmission unit (MTU) of an external network interface, the method comprising:

(a) if a packet data transmission request is received from an upper layer of a virtual network interface included in a routing processor, determining whether amount of packet data to be transmitted and additional header is greater than the MTU of an internal data communication channel of a router;

(b) if it is determined that the amount of packet data and additional header is greater than the MTU of the internal data communication channel of the router in step (a), disassembling the packet data into data segments of a predetermined size, such that the amount of data segment and additional header is not greater than the MTU of the internal data communication channel, and transmitting the data segments of the predetermined size to an external IPC interface of a linecard processor;

(c) if it is determined that the amount of packet data and additional header is not greater than the MTU of the internal data communication channel in the operating system of the router in step (a), adding the additional header to the packet data, and transmitting the packet data to the external IPC interface;

(d) determining whether data received by the external IPC interface is a disassembled data

segment;

(e) if it is determined that data received by the external IPC interface is the disassembled data segment in step (d), removing the additional header from the received data segment, assembling the received data segments into the original packet data, transmitting the assembled packet data to the external network interface, and requesting a packet data transmission to the external network interface; and

(f) if it is determined that the data received by the external IPC interface is not a disassembled data segment in step (d), removing the additional header from the data, transmitting the data to the external network interface, and requesting the packet data transmission to the external network interface.

7. (Original) The method of claim 6 further comprising (g) if all data segments constituting the packet data has not yet been received within a predetermined amount of time, discarding the data which has already been received and disregarding data which is received after the predetermined amount of time has passed.

8. (Previously Presented) A method of supporting a maximum transmission unit (MTU) of an external network interface, the method comprising:

(a) if packet data is received by the external network interface included in a linecard processor, determining whether the amount of packet data and additional header is greater than the MTU of an internal data communication channel of a router;

(b) if it is determined that the amount of packet data and additional header is greater than the MTU of the internal data communication channel in the operating system of the router in step (a), disassembling the packet data into data segments of a predetermined size, such that the amount of packet data and additional header is not greater than the MTU of the internal data communication channel, and transmitting the data segments of the predetermined size to a virtual network interface of a routing processor;

(c) if it is determined that the amount of the packet data and additional header is not greater than the MTU of the internal data communication channel in the operating system of the router in step (a), adding the additional header to the packet data and transmitting the packet data to the virtual network interface;

(d) determining whether data received by the virtual network interface is a disassembled data segment;

(e) if it is determined that data received by the virtual network interface is the disassembled data segment of in step (d), removing the additional header from the received data segment, assembling the received data segments into the original packet data, and transmitting the packet data to an upper layer of the virtual network interface; and

(f) if it is determined that the data received by the virtual network interface is not a disassembled data segment in step (d), removing the additional header from the received data packet and transmitting the data to the upper layer of the virtual network interface.

9. (Original) The method of claim 8, wherein the method further comprises (g) if all data constituting the packet data has not yet been received within a predetermined amount of time, discarding the data which has already been received and disregarding data which is received after the predetermined amount of time has passed.

10. (Original) A computer readable medium having embodied thereon a computer program for the method of claim 6.

11. (Original) A computer readable medium having embodied thereon a computer program for the method of claim 8.